VISION, GOALS AND OBJECTIVES

TOWARDS SUSTAINABLE TRANSPORTATION

DEVELOPMENT OF A REGIONAL TRANSPORTATION PLAN FOR THE GREATER TORONTO and HAMILTON AREA

White Paper #1

MAY 2008

METROLINX

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A Message From the Chair

May 2008

Rob MacIsaac
Chair, Metrolinx

As we look towards the future of transportation in the Greater Toronto and Hamilton Area (GTHA), the picture is starting to become much clearer.

Now, we want to bring it into sharp focus. With the release of two White Papers, Metrolinx is taking the next major step towards a plan to dramatically change and improve transportation choices across the entire region.

The White Paper you are now reading sets out the vision, goals and objectives for a comprehensive Regional Transportation Plan (RTP). White Paper 2 provides preliminary directions and concepts on specific steps that could be taken to get the results we want.

In the 16 months since Metrolinx was formed, we have undertaken a very broad, very detailed examination of transportation issues which affect this region. We released seven Green Papers to foster discussion around key topics.

We studied other jurisdictions to help determine best practices and learn about innovative projects. We conducted extensive consultations with a wide range of stakeholders. And we have encouraged broad-based input both through our interactive website and through meetings with stakeholders.

All of this has given us a strong sense of direction together with some very specific ideas about how we might proceed.

White Paper 1 deals with the 'big picture' of transportation's role in our region. Before we start making decisions about what and where to build, we need a clear sense of direction. There is an old adage that says, 'Vision without action is a daydream. Action without vision is a nightmare.'

This White Paper sets out our proposed overarching vision for the RTP, guiding our decisions as we move forward. It also suggests ways to measure our success, to ensure we stay on the right course.

The input we receive from both White Papers will feed into a Draft RTP, which will be released for public and stakeholder consultations in late July. Our plan is to hold a series of Open Houses and Public Meetings across the region in September, giving everyone an opportunity to comment on every aspect of the Draft RTP.

Based on these consultations, and further discussions with the public on how the recommendations could be paid for and implemented, we will make the appropriate revisions and release the final RTP this Fall.

We will continue to welcome comments on our website and by other means throughout the process.

I am very excited about the progress we have made. And I must say, this is long overdue.

Decades ago, prior generations built subways, rail lines, and a grid of 400-series highways which supported prosperity for those who followed. It is our turn to step up to the plate. We need to build a new transportation system using the principles of sustainability and mobility for those who will follow us.

Thank you for taking the time to read the White Papers. We look forward to hearing your thoughts, concerns and suggestions.

And we look forward to moving boldly ahead, creating a transportation system befitting a first-class city-region.

Rob MacIsaac
Chair, Metrolinx

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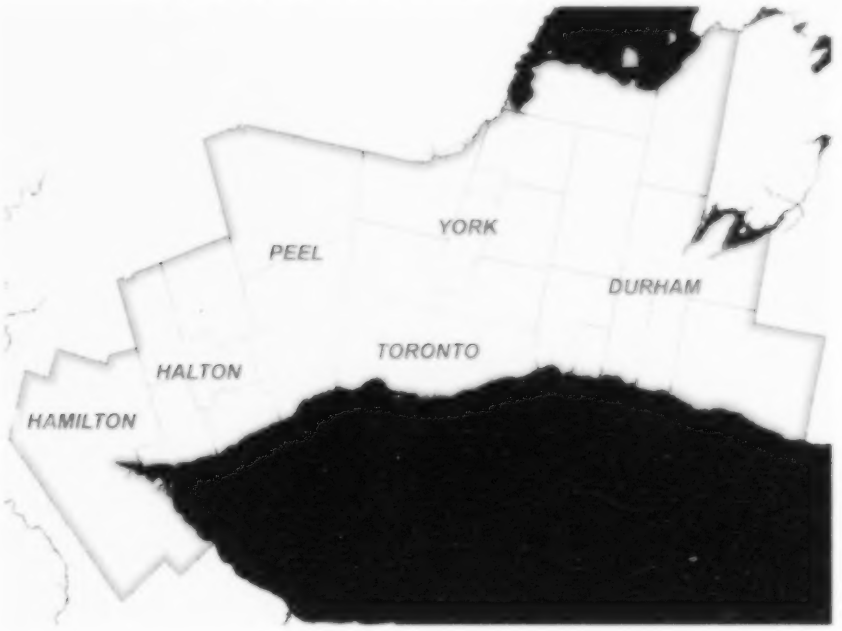
1 Background

1.1 The Metrolinx Mandate

Metrolinx was created by the Government of Ontario to develop and implement an integrated multi-modal transportation plan for the *Greater Toronto and Hamilton Area (GTHA)* — the metropolitan region encompassing the City of Toronto, the four surrounding regional municipalities (Durham, Halton, Peel and York) and the City of Hamilton. Its mandate includes providing seamless, coordinated transportation throughout this region, which is Canada's largest and among North America's most rapidly growing.

Metrolinx operates within the legislative framework of the *Greater Toronto Transportation Authority Act, 2006*.

Figure 1.1 The Greater Toronto and Hamilton Area



1.2 The Regional Transportation Plan

An immediate priority for Metrolinx is to create a Regional Transportation Plan (RTP), a long-term strategic plan for an integrated multi-modal regional transportation system. Triple bottom-line goals and objectives — people, environment, and economy — are guiding the RTP development, evaluation and recommendations.

The RTP's vision, goals and objectives for transportation in this region will assist decision-making in the day-to-day planning, coordination and implementation of the transportation system. It will set out priorities, policies and programs for a future of complete mobility. The plan will also be a touchstone by which we can monitor and regularly check to ensure that we are moving closer to the vision for a region that is supported by a high quality of life, prosperity and a healthy environment.

This region is rapidly changing and the rest of the world to which we are connected continues to change as well. Having a clear vision with specific goals and objectives that influence decisions is critical to a steady path forward.

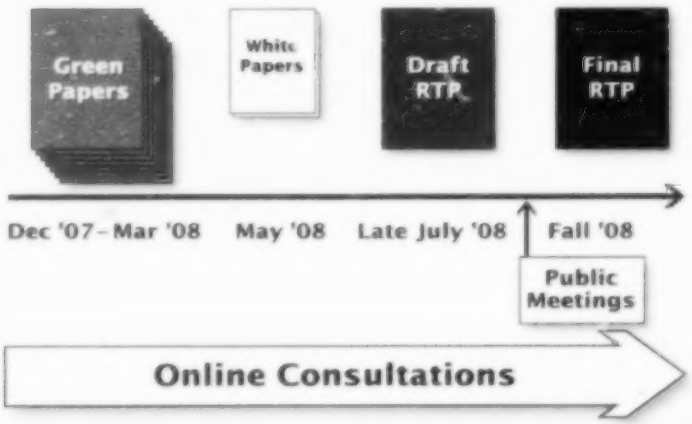
1.3 Developing the Regional Transportation Plan

During the period between December 2007 and March 2008, Metrolinx published seven Green Papers, as the first step towards developing the Regional Transportation Plan. These Green Papers presented key trends, challenges and opportunities for the *GTHA* transportation system for public discussion and showcased best practices from around the world.

A wide range of public comments has been received on the Green Papers, and this feedback has informed the development of two companion White Papers.

White Paper 1: Visions, Goals and Objectives presents the vision for the *GTHA* transportation system, and a series of goals and objectives which, along with a range of possible indicators, form the basis for developing, evaluating and ultimately shaping the RTP.

Figure 1.2 The RTP Consultation and Development Process



White Paper 2: Preliminary Directions and Concepts draws together the two key aspects of the plan: transformational policy programs and tools; and well-integrated and functional infrastructure. The paper sets out a preliminary analysis of several test concepts including a Business-As-Usual (BAU) concept for the transportation infrastructure system for a preliminary performance/cost comparison.

The White Papers have been published as interim reports to provide a basis for ongoing consultations with stakeholders and the public. Input on the White Papers will help to inform the development of the Draft RTP that will be released in conjunction with a Draft Investment Strategy for public comment and broad consultation in late July. The Investment Strategy will set out a suite of potential dedicated revenue sources and funding tools to expand, maintain and operate the regional transportation system in a financially sustainable way over the next 25 years and beyond.

The final Regional Transportation Plan will be released in Fall 2008.

1.4 Purpose and Structure of This Paper

As Lewis Carroll observed, 'If you don't care where you are going, any road will get you there'. A bold vision with understandable goals and objectives is critical as a guide and common reference point for decision-making.

The following Green Papers are available for review and comment at www.metrolinx.com or by calling 416-874-5900.

- **Green Paper 1: Towards Sustainable Transportation (December 2007)**
- **Green Paper 2: Mobility Hubs (February 2008)**
- **Green Paper 3: Active Transportation (February 2008)**
- **Green Paper 4: Transportation Demand Management (February 2008)**
- **Green Paper 5: Moving Goods and Delivering Services (February 2008)**
- **Green Paper 6: Roads and Highways (March 2008)**
- **Green Paper 7: Transit (March 2008)**

In this paper, we present a vision as well as goals, and objectives for the region's transportation system. They describe how the transportation system will rest on a foundation of the three pillars of people, the environment and the economy. They are far-reaching and reflect the bold and ambitious objectives of the RTP.

Some of the objectives are almost entirely within the scope of the transportation system to address, such as reducing crowding and improving customer service. Others are affected by many factors, of which transportation is just one, such as greenhouse gas (GHG) emissions and obesity rates. While some objectives are easy to measure and quantify, others are much more qualitative in nature. All are critical to meeting our ultimate vision.

In Section 4 of this paper, we present a preliminary set of indicators by which progress towards the achievement of the RTP's vision, goals and objectives could be measured. Values of some quantitative indicators can be estimated by traditional transportation modelling, while others require measurement through surveys of actual future conditions. While some possible indicators are quantitative and can be modelled and used for the performance/cost comparisons of transportation system concepts, many require baseline measurements to provide benchmarks for future evaluation. Those used in the model are described more fully in White Paper 2.

Definitions for the italicized terms found in this paper are provided in the Glossary of Terms found in Appendix A of White Paper 2.

1.5 Current and Future Challenges

As described in Green Paper 1, transportation supply, demand and performance trends over the past two decades have been deteriorating. A projection of these trends to the year 2031 shows continuing decline unless significant improvements are made.

In the Green Papers, these trends and challenges were explored in detail and some key conclusions emerged.

- Our system for planning and financing transportation and our individual travel behaviours are unsustainable.
- The transportation system must be improved to meet the needs of current residents, and also the millions more who will call this region their home in the future. Our population and employment forecasts show an increase of 2.5 million people and 1.3 million jobs across the *GTHA* by the year 2031, which will place increasing demands on our transportation system.
- Existing infrastructure is being used inefficiently, with far too many trips being taken in single-occupant motor vehicles and far too few trips being taken by transit, bicycle or foot. Average automobile occupancy rates are only 1.2 persons/vehicle.
- There is little choice for travellers. Most feel they need to depend on cars for getting around, or are limited by how far they are able to walk or how well their neighbourhood is served by transit. The average percentage of trips taken by car across the *GTHA* is currently 75 per cent.
- Transportation infrastructure and operations require predictable and reliable revenue sources. Funding for transportation infrastructure has not kept pace with the needs of a growing population, thereby reducing our productivity and increasing the cost of our goods and services.
- The true cost of travel is not reflected in the prices that users pay for different options.
- The cost of operating an automobile in the region will continue to rise as a result of increasing fuel, insurance and other associated operating costs.
- There is a lack of awareness of the impacts of individual travel behaviour.
- The system is out of balance and in many instances seems designed for cars instead of people. Priority is generally given to car travel over other means, such as transit or *active transportation*.
- Land use planning and transportation planning are not being well-integrated. Low-density land use patterns, particularly in the suburban areas of the region, do not adequately support the provision of improved, competitive transit service.
- The transportation system is not adequately integrated and coordinated across boundaries, or across modes.
- *Transportation Demand Management* (TDM) and *Intelligent Transportation Systems* (ITS) efforts are under-funded and therefore not used to their potential across the *GTHA*. Current efforts are not coordinated or integrated to maximize their effectiveness.
- More emphasis and resources are required to improve overall transit customer service (e.g. vehicle cleanliness, personal safety, real-time travel updates, etc.).

In order to be transformational, the RTP must address these challenges with a broad range of tools; improvements to infrastructure alone will not be sufficient. Changes to legislation, educational and promotional programs, and supportive policies must also be designed and implemented. These pieces must work together to provide an improved experience within the transportation system, encourage a significant change in travel behaviour, and deliver a robust and convenient transportation network.

A Strong Foundation

Some important and foundational work is already in place, making the way forward promising. The province of Ontario and municipalities are implementing the *Growth Plan for the Greater Golden Horseshoe* that will direct growth in a way that makes transit and *active transportation* increasingly viable options. The Greenbelt Plan protects rural, natural and agricultural

areas that are important to the ecological health of the region. In addition, all levels of government are recognizing the importance of programs, policies and legislation which create an environment that promotes more sustainable practices in travel behaviour.

The RTP will build on this work, marking the beginning of a journey towards a vastly improved, more sustainable transportation system. We have little choice but to change. Our current transportation system is quickly becoming dysfunctional. Space and cost considerations limit our ability to increase the capacity of major highways and *arterial roads*. We need to rely more on transit and *active transportation*. This means transforming land use, road use, goods movement and demand management policies. It means a bold plan and financial commitment to infrastructure over the long-term. It means a changed culture and behavioural shifts to address how we get around the region. This plan will be a guide to a future that offers complete mobility. It will set the foundation for a sustainable transportation system and more sustainable communities. This plan will be key for the *GTHA* to become one of the world's most attractive and successful regions.

Have a Say! Help Shape the GTHA's Transportation Future

Whether we walk to the corner store, take transit to work, drive to the hospital, cycle to school, or rely on the movement of goods for our business, we all have opinions about how the GTHA's transportation system is performing. Many of us have thoughts on how it could be improved. Whatever your transportation situation, Metrolinx wants to hear from you as we develop the Regional Transportation Plan for the GTHA. The more people we hear from, the more inclusive and effective the Plan will be.

Visit www.metrolinx.com to participate in our online public consultations or contact us at 416-874-5900 to find out how you can get involved.

2 Vision

AN INTEGRATED TRANSPORTATION SYSTEM FOR OUR REGION THAT ENHANCES PROSPERITY, SUSTAINABILITY AND QUALITY OF LIFE.

A generation from now, the nine million residents of the Greater Toronto and Hamilton Area will use a well-integrated transportation system that supports:

A high quality of life. A high quality of life for all people in this region will be our greatest motivator. Our cities, towns, suburbs and rural areas will be more liveable, with more options for getting around the whole region conveniently, comfortably and safely.

A thriving, healthy and protected environment. We will plan, establish and maintain a transportation system that conserves resources and leaves a legacy of a healthy and clean environment for our children and grandchildren.

A strong, prosperous and competitive economy. At the heart of Canada's economy, our region will be competitive with the strongest regions in the world, based on an efficient and convenient transportation system. It will help attract and retain the best and the brightest, and make the shipping of goods and delivery of services efficient.

This vision of complete mobility means that all of our diverse needs will be satisfied through a transportation system that is focussed on the customer and that seamlessly links people to places.

All modes of transport will link together a system of *mobility hubs* that are well-designed and attractive – providing seamless service that allows people to easily connect from one mode of transportation to another.

Public transit will compete effectively with the automobile because it will be convenient, comfortable, safe, reliable and valued by its users. Walking and cycling will be logical choices for a healthier public.

People will have timely and complete information on transportation schedules, cost and impacts so that they can make informed choices about how they use the transportation system.

We will be proud of our transportation system.

3 Goals and Objectives

Table 3.1 Goals and Objectives for a High Quality of Life

A HIGH QUALITY OF LIFE	
A high quality of life for all residents in this region will be our greatest motivator. Our cities, towns, suburbs and rural areas will be more liveable, with more options for getting around the whole region conveniently, comfortably and safely.	
GOALS	**OBJECTIVES**
A. **Comfort and Convenience:** There will be a strong emphasis on the user. Getting around will be more convenient with coordinated information, facilities, operations and pricing; a more comfortable and less crowded experience; and the highest standard of customer service across the system.	1. Improved transportation experience and travel time reliability 2. Less crowding on transit
B. **Travel Time Reliability:** Uncertainty regarding travel times and delays will be reduced.	3. Decreased need for vehicular travel, particularly over long distances and at rush hour
C. **Transportation Choices:** People will have a wide range of options available to them for getting around regardless of age, means or (dis)ability, including walking, cycling, public transit and automobiles.	4. Increased transportation options for accessing a range of destinations 5. Region-wide integrated fare structure and collection, and schedule coordination
D. **Attractive Places:** The transportation system will help us create valuable, beautiful and attractive places. Roads, streets, transit lines and stations will be designed to benefit both travellers and local residents. Negative impacts of transportation – related noise and poor air quality – will be minimized.	6. Improved information, including real-time information, available to people to plan their trips 7. Reduced impacts of air quality on human health 8. Reduced transportation-related noise 9. More transit- and pedestrian-friendly streetscapes, and improved walking and cycling amenities
E. **Balanced:** The need to increase existing established transit markets will be balanced with the need to grow new markets for transit.	10. Increased daily levels of exercise from walking and cycling
F. **Fit and Healthy Lifestyles:** It will be easily accessible for all, including children and seniors, to walk and cycle as part of their daily lives and maintain a healthy lifestyle.	11. Continued progress towards zero casualties and injuries on all transportation modes, including walking

GOALS	OBJECTIVES
G. **Safe and Secure Mobility:** Getting around will be safer and more secure. Parents will feel comfortable letting their children walk, cycle or take public transit to school. All users and operators will feel safe when using the transportation system.	12. Improved real and perceived traveller safety 13. Improved accessibility for seniors, children and the disabled
H. **Fairness and Transparency:** Citizens will play a role in shaping the future transportation system. Decisions will be transparent.	14. Increased engagement in the planning of the transportation system by a diverse group of citizens

Table 3.2 Goals and Objectives for a Thriving, Healthy and Protected Environment

A THRIVING, HEALTHY AND PROTECTED ENVIRONMENT *We will plan, establish and maintain a transportation system that conserves resources and leaves a legacy of a healthy and clean environment for our children and grandchildren.*	
GOALS	**OBJECTIVES**
I. **A Smaller Carbon Footprint and Reduced Dependence on Non-Renewable Resources:** Our transportation system will operate sustainably within the constraints of – and in balance with – ecosystems. Decisions about our transportation system will take into account its potential to impact air, land and water quality; human, plant and animal life; social, cultural and economic conditions; and the built environment. • We will reduce GHGs – our carbon footprint – and other harmful emissions and discharges related to transportation to sustainable levels. • We will reduce our dependence on non-renewable resources like fossil fuels and man-made chemicals that accumulate in the environment. • We will use recyclable materials, for example, in construction materials and vehicles.	15. Decreased use of non-renewable resources 16. Increased recycling rate of transportation-related construction materials and vehicles 17. Reduced and stabilized transportation-related GHG emissions as per the provincial *Go Green: Ontario's Action Plan for Climate Change:* reductions of six per cent by 2014, 15 per cent by 2020, and 80 per cent by 2050 18. Improved air quality 19. Reduced car use 20. Improved energy efficiency
J. **Reduced Land Consumption for Urban Development:** The transportation system itself will use less space, help curb sprawl, and help promote and sustain more compact and efficient urban forms.	21. Reduced consumption of land for urban development 22. Reduced ecological impact to ou gricultural and natural systems
K. **Adopt the Precautionary Principle and an Ecosystem Approach:** In planning the transportation system of the *GTHA*, the precautionary principle will be applied to ensure that the environment is protected, conserved and wisely managed.	23. Increased awareness of how travel choices impact the environment

Table 3.3 Goals and Objectives for a Strong, Prosperous and Competitive Economy

A STRONG, PROSPEROUS AND COMPETITIVE ECONOMY	
At the heart of Canada's economy, our region will be competitive with the strongest regions in the world based on a cost-effective and affordable transportation system that will help attract and retain the best and the brightest, and make the shipment of goods and delivery of services efficient.	
GOALS	**OBJECTIVES**
L. **Prosperity and Competitiveness:** The transportation system will be designed to respond efficiently and equitably to the needs of the Ontario economy; it will create opportunities for greater prosperity throughout the region. Deliveries, imports and exports will be faster and more reliable thanks to a more efficient, integrated and coordinated transportation system. Residents will be able to get to a greater number of jobs.	24. Lower average trip time for people and goods 25. Greater reliability of the freight and passenger systems 26. Managed congestion 27. Increased productivity of the transportation system 28. Improved transportation and land use integration 29. Reduced delays, damage and costs in transferring goods from one mode to another, and more seamless region-wide services for travellers and service-providers 30. Improved real-time information about transportation choices, their speeds and costs 31. Improved connections and service within the *GTHA* and to/from inter-regional, inter-provincial, and international terminals and facilities 32. Increased financial self-sufficiency of the transportation infrastructure and projects 33. Reduced use of out-of-province energy sources 34. Increased prevalence of *Transportation Demand Management* practices 35. Improved value of transportation investment and spending for households, businesses, governments and other users 36. Better reflect the cost of transportation services in the prices paid by users 37. Competitive shipping cost structure
M. **Foundation of a Well-Functioning Region:** The transportation system will be a cornerstone of city building, creating a region that is a destination of choice for new residents and businesses. Great infrastructure will create new transit-oriented development opportunities. Transportation services, particularly transit, will not lag behind urban growth.	
N. **Multi-Modal Integration:** The transportation system will be fully integrated. It will be easy to make a decision on how to get somewhere or ship something thanks to seamless integration, accurate and timely information, and logical and transparently determined prices.	
O. **Interconnectedness:** The *GTHA* transportation system will be well-connected to surrounding regions, the rest of Canada and the world.	
P. **Resilience:** By reducing our oil dependence, we will better withstand volatility in energy supply and prices, and have more flexibility to switch to new fuels and technologies. We will strive to anticipate the impacts of climate change on infrastructure.	
Q. **Efficiency and Fiscal Responsibility:** The transportation system will be designed to optimize the use of resources and provide better value to households, businesses and governments.	

GOALS	OBJECTIVES
R. **Fiscal Sustainability:** Funding for transportation will be sufficient, reliable and predictable.	38. Transparent and fairly allocated passenger transportation costs, across modes
S. **Safety and Security:** The transportation system will be designed to improve safety and security.	39. Fair and effective fiscal treatment of various modes
	40. Optimized use of all travel rights-of-way by commercial vehicles through a range of incentives and disincentives
	41. Minimized direct and indirect economic losses due to accidents

4 Possible Indicators

4.1 Introduction

A clear set of indicators is needed to help us measure progress towards the goals and objectives presented in Section 3.

In this section, we present a set of possible indicators for discussion and feedback. Some of these indicators are easily quantifiable, and can be easily modelled. Others are more qualitative, and more difficult to model. For some of the indicators, the transportation system is the most significant contributor. Examples would be travel times or congestion levels. For other indicators, the transportation system is just one of many contributing factors, such as obesity rates or GHGs.

In some cases, the same indicators are repeated in the table, reflecting their fulfilment of multiple objectives.

These indicators will be further amended and refined based on feedback received on this paper, and then presented for further discussion as part of the Draft RTP consultations.

4.2 Objectives and Possible Indicators

Table 4.1 Goals and Possible Indicators for a High Quality of Life

A HIGH QUALITY OF LIFE	
OBJECTIVES	**POSSIBLE INDICATORS**
1. Improved transportation experience and travel time reliability	• On-time performance, measured as variability of travel time • Number and duration of major blockages/delays-per-year on roads and transit • Change in people-moving capacity (as opposed to vehicular capacity) of the transportation system generally, and in specific areas • Customer satisfaction measures/index
2. Less crowding on transit	• Average load factors by transit mode
3. Decreased need for vehicular travel, particularly over long distances and at rush hour	• Size of activity area or area within which people conduct most of their daily activities • Total motorized and mechanized travel • Average trip length from home to work • Per cent of trips that are taken at rush hour

OBJECTIVES	POSSIBLE INDICATORS
4. Increased transportation options for accessing a range of destinations	• Per cent of trips taken by transit and *active transportation* • Jobs and variety of uses within 30 minutes and 45 minutes of one's home – by *active transportation*, transit and auto • Time spent travelling per day by mode (per capita) • Per cent of commuters who can get to work within 30 minutes and 45 minutes via transit, *active transportation* and car • Average trip duration via transit, *active transportation* and auto (system-wide and for sample trips) • Per cent of population and jobs, and *density* of population and jobs within 500 metres (m), one, two and five kilometres (km) of *rapid transit* • Proximity to *rapid transit* for neighbourhoods where dependence on transit is particularly high • Proximity of *major trip generators*, *urban growth centres*, corridors and dense areas to *higher-order transit* infrastructure • Seat-kilometre/square kilometre capacity available via each type of transit mode • Average service frequency by transit mode • Per cent of residents with a monthly or annual transit pass • Travel speeds for selected major origin-destination pairs, compared by mode • Rate of congestion growth on roads (per cent/year)
5. Region-wide integrated fare structure and collection, and schedule coordination	• Participation by transit providers in fare integration and regional fare collection, weighted by ridership • Degree of schedule integration • Number of transit service discontinuities at municipal boundaries
6. Improved information, including real-time information, available to people to plan their trips	• Availability of a complete mobility trip planner • Per cent of transit stops with availability of "next bus" information; per cent of users able to access information with mobile devices • Number and per cent of drivers using dynamic route optimization tools
7. Reduced impacts of air quality on human health	• Hospital admissions related to air quality; rates of asthma in children and adults • Number of premature deaths related to air quality
8. Reduced transportation-related noise	• Per cent of population regularly exposed to excessive noise (from transportation)
9. More transit and pedestrian-friendly streetscapes; Improved walking and cycling amenities	• Km of gaps in *active transportation* infrastructure networks • Per cent of transit stops with shelters, schedules and route maps • *Active transportation modal split* • Per cent of population within 300 m of a bicycle lane or trail via neighbourhood streets • Per cent of transit stations with bicycle storage, weighted by ridership • Per cent of streets with sidewalks on both sides • Km of pedestrian ways and bikeways • Km of sidewalks per km of new roads

OBJECTIVES	POSSIBLE INDICATORS
10. Increased daily levels of exercise from walking and cycling	• Average minutes spent walking and cycling per person per day • Per cent of children walking or cycling to school • Obesity rates (children and adults) • Type II Diabetes rates • Hypertension rates • Chronic Obstructive Pulmonary Disease (COPD) rates
11. Continued progress towards zero casualties and injuries on all transportation modes, including walking	• Number of collisions, casualties and injuries by mode, particularly involving children/seniors (total, per million residents, million person-km; per million vehicle-km per year)
12. Improved real and perceived traveller safety	• Number of breaches of personal safety within the transportation system • Per cent of travellers who perceive danger to personal safety on various modes of transportation
13. Improved accessibility for seniors, children and the disabled	• Per cent of universally accessible transit vehicles and stations, as well as information on transportation services (to *Accessibility for Ontarians with Disabilities Act* (*AODA*) standard) • Index of customer satisfaction with special needs transportation services • Per cent of seniors and people with disabilities within 300 m of transit via continuous, fully accessible sidewalks and protected crosswalks • Per cent of the region accessible by specialized transit
14. Increased engagement in the planning of the transportation system by diverse groups of citizens	• Number and per cent of citizens participating in consultation processes

Table 4.2 Goals and Possible Indicators for a Thriving, Healthy and Protected Environment

A THRIVING, HEALTHY AND PROTECTED ENVIRONMENT	
OBJECTIVES	**POSSIBLE INDICATORS**
15. Decreased use of non-renewable resources	• Total transportation-related energy use by type • Total annual fuel and energy consumption • Average energy consumption per tonne-km transported • Salt and organic or mineral-based melter use
16. Increased recycling rate of transportation construction materials and vehicles	• Tire recycling rates • Construction materials recycling rates (from transportation infrastructure) • Vehicle recycling rates
17. Reduced and stabilized transportation-related GHG emissions as per the provincial *Go Green: Ontario's Action Plan for Climate Change:* reductions of six per cent by 2014, 15 per cent by 2020, and 80 per cent by 2050	• GHG emission levels per person-km and total emissions/year
18. Improved air quality	• Number of smog days per year • Common air pollutants/smog precursors (NOx, SOx, CO, VOCs, PM10 and PM2.5 values) emissions per person-km, total emissions/year, and localized concentrations
19. Reduced car use	• Vehicle-km travelled (VKT) (total and per capita) • Average number of weekday person trips by car • Number of vehicles per household • Average trip length from home to work
20. Improved energy efficiency	• Average passenger fleet, commercial truck fleet and locomotive fuel efficiency • Energy use per tonne and passenger transported per km • Ratio of cost of transportation energy use to Gross Domestic Product (GDP) • Per cent of transit stations designed to high "green architecture" standards such as *LEED* Gold
21. Reduced consumption of land for urban development	• Hectares of land dedicated to transportation infrastructure • Amount of urbanized space per capita • Per cent of development in existing built-up areas • Density of development in greenfield areas • Density of development in *urban growth centres*
22. Reduced ecological impact to our agricultural and natural systems	• Impact on wetlands, biodiversity, farmland, terrestrial and aquatic habitats, groundwater, lakes and watercourses

OBJECTIVES	POSSIBLE INDICATORS
23. Increased awareness of how travel choices impact the environment	• Availability of quantifiable measures and impacts on various choices to users including through trip-planning tools

Table 4.3 Goals and Possible Indicators for a Strong, Prosperous and Competitive Economy

A STRONG, PROSPEROUS AND COMPETITIVE ECONOMY	
OBJECTIVES	**POSSIBLE INDICATORS**
24. Lower average trip time for people and goods	• Average vehicle speed and travel time by auto, transit and *rapid transit* • Per cent of arterials and *expressways* experiencing congestion • Average time to clear a collision
25. Greater reliability of the freight and passenger system	• On-time performance, measured as variability of truck and rail travel times
26. Managed congestion	• Per cent of vehicle km travelled in congestion • Total hours of delay (autos and transit) • Costs resulting from congestion
27. Increased productivity of the transportation system	• Utilization rate of roads (volume/capacity) • Transportation costs as per cent of GDP • Average number of passengers per vehicle; per cent of vehicles with a single driver • Number and per cent of vehicles equipped with dynamic route optimization tools • Per cent of dead-heading trucks (i.e. a truck travelling without cargo), or average loading ratios • Per cent of shipments processed with route optimization, loading optimization • Per cent of shipments with a destination in the *GTHA* processed through a consolidated logistics centre • Per cent of trucks centrally managed with localization technology
28. Improved transportation and land use integration	• Policies in place to direct development – including publicly funded facilities – to areas well-served by transit • Per cent of resident and workers in large trip generators within walking distance of a *rapid transit* station • Satisfaction of functional objectives at *mobility hubs* (connectivity, amenities, type and amount of development, etc.) • Policies to coordinate large-scale logistics facilities in adequate areas with minimal imposition from incompatible uses • Availability and use of walking and cycling urban design standards • Number of non-residential parking spaces over number of jobs (*GTHA* and by area or project) • Per cent of length of existing and new roads and streets that fulfil the "complete streets" concept

OBJECTIVES	POSSIBLE INDICATORS
29. Reduced delays, damage and costs in transferring goods from one mode to another and more seamless region-wide services for travellers and service-providers	• Benchmarking of design, construction, maintenance and operational costs tied to satisfaction metrics • Cost per passenger/km and tonne/km for roads
30. Improved real-time information about transportation choices, their speeds and costs	• Availability of a complete mobility trip-planner • Availability of "next bus" information • Availability of flexible, real-time information for choosing a travel route, including inside vehicles
31. Improved connections and service within the *GTHA* and to/from inter-regional, inter-provincial and international terminals and facilities	• Improvements to connectivity within and beyond the region
32. Increased financial self-sufficiency of the transportation infrastructure and projects	• Per cent of transportation system capital and operating costs recovered from user fees
33. Reduced use of out-of-province energy sources	• Expenditure on imported energy for transportation
34. Increased prevalence of *Transportation Demand Management* practices	• Per cent of large employers (100+) with a *Transportation Demand Management* plan
35. Improved value of transportation investment and spending for households, businesses, governments and other users	• Transportation costs as per cent of GDP (relative to other benefits) • Average annual transportation expenditures per household as a per cent of income (relative to other benefits)
36. Better reflect the cost of transportation services in the prices paid by users	• Per cent of transportation system capital and operating costs recovered from user fees

OBJECTIVES	POSSIBLE INDICATORS
37. Competitive shipping cost structure	• Average transportation cost as a per cent of the cost of end-products compared to competing jurisdictions
38. Transparent and fairly allocated passenger transportation costs, across modes	• Average user transportation costs per year (weighted average of all modes, and average by mode) • Total transit and road transportation capital costs for 2006 – 2031 expansion • Net revenues from transportation user-fees
39. Fair and effective fiscal treatment of various modes	• Fair treatment under provincial fiscal policies • Engagement of federal government
40. Optimized use of all travel rights-of-way by commercial vehicles through a range of incentives and disincentives	• Measure of balanced use of parallel corridors by commercial vehicles
41. Minimized direct and indirect economic losses due to accidents	• Direct and indirect economic costs of accidents, by mode and area

5 Next Steps

The vision, goals, objectives and possible indicators are presented in this White Paper as a basis for discussion, review and comment by stakeholders and the public. This White Paper 1 should be read with *White Paper 2: Preliminary Directions and Concepts*. Feedback from both papers will inform the development of the Draft RTP, which will be released for consultation in late July 2008.

A final RTP will be released in Fall 2008.

You can send your comments on this paper to:

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